

[0011] (1) a chitin nanofiber; and

[0012] (2) a chitosan nanofiber or a polysaccharide.

[9] The method of [8], wherein the medium composition comprises the chitin nanofiber and the chitosan nanofiber, and a ratio of the chitin nanofiber and the chitosan nanofiber in the medium composition is chitin nanofiber:chitosan nanofiber=1:0.5-20.

[10] The method of [8], wherein the medium composition comprises the chitin nanofiber and the polysaccharide, and the polysaccharide is selected from the group consisting of methylcellulose, deacylated gellan gum, and sodium alginate.

[11] The method of any of [8] to [10], wherein the adherent cell is a cell that self-aggregates under suspension culture.

[12] The method of any of [8] to [11], wherein the adherent cell is a stem cell.

[13] The method of [12], wherein the stem cell is a mesenchymal stem cell.

[14] The method of [12] or [13], wherein the suspension culture is for proliferating the stem cell, and maintaining pluripotency and chemotacticity of the stem cell.

[15] The method of any of [8] to [14], further comprising the following steps:

[0013] (1) a step of adding the medium composition of any of [1] to [7] without performing a treatment for detaching the suspension cultured cells from the chitin nanofiber, and chitosan nanofiber or polysaccharide, and

[0014] (2) a step of subjecting the mixture obtained in step (1) to suspension culture.

[16] A method for producing a cell secretion product, comprising a step of suspension culturing an adherent cell in a medium composition comprising

[0015] (1) a chitin nanofiber; and

[0016] (2) a chitosan nanofiber or a polysaccharide.

[17] The method of [16], wherein the medium composition comprises the chitin nanofiber and the chitosan nanofiber, and a ratio of the chitin nanofiber and the chitosan nanofiber in the medium composition is chitin nanofiber:chitosan nanofiber=1:0.5-20.

[18] The method of [16], wherein the medium composition comprises the chitin nanofiber and the polysaccharide, and the polysaccharide is selected from the group consisting of methylcellulose, deacylated gellan gum, and sodium alginate.

[19] The method of any of [16] to [18], wherein the adherent cell is a cell that self-aggregates under suspension culture.

[20] The method of any of [16] to [19], wherein the adherent cell is a stem cell.

[21] The method of [20], wherein the stem cell is a mesenchymal stem cell.

[22] The method of any of [16] to [21], wherein a concentration of the serum in the medium composition is not more than 2%.

[23] The method of any of [16] to [22], wherein the cell secretion product is at least one selected from the group consisting of a low-molecular-weight compound, a protein, a nucleic acid, and a cell secretion vesicle.

[24] A medium composition for suspension culture of an adherent cell, comprising a poly(1,4)-N-acetyl- β -D-glucosamine nanofiber having a specific acetylation degree, wherein the specific acetylation degree is 5-70%.

[25] The medium composition of [24], wherein a concentration of the poly(1,4)-N-acetyl- β -D-glucosamine nanofi-

ber having the m specific acetylation degree in the medium composition is 0.0001-0.2% (w/v).

[26] The medium composition of [24] or [25], wherein the adherent cell is a cell that self-aggregates under suspension culture.

[27] The medium composition of any of [24] to [26], wherein the adherent cell is a stem cell.

[28] The medium composition of [27], wherein the stem cell is a mesenchymal stem cell.

[29] The medium composition of [27] or [28], wherein the suspension culture is for proliferating the stem cell, and maintaining pluripotency and chemotacticity of the stem cell.

[30] A method for culturing an adherent cell, comprising a step of suspension culturing the adherent cell in a medium composition comprising poly(1,4)-N-acetyl- β -D-glucosamine nanofiber having a specific acetylation degree, wherein the specific acetylation degree is 5-70%.

[31] The method of [30], wherein a concentration of the poly(1,4)-N-acetyl- β -D-glucosamine nanofiber having the specific acetylation degree in the medium composition is 0.0001-0.2% (w/v).

[32] The method of [30] or [31], wherein the adherent cell is a cell that self-aggregates under suspension culture.

[33] The method of any of [30] to [32], wherein the adherent cell is a stem cell.

[34] The method of [33], wherein the stem cell is a mesenchymal stem cell.

[35] The method of [33] or [34], wherein the suspension culture is for proliferating the stem cell, and maintaining pluripotency and chemotacticity of the stem cell.

[36] The method of any of [30] to [35], further comprising the following steps:

[0017] (1) a step of adding the medium composition of any of [24] to [29] without performing a treatment for detaching the suspension cultured cells from the poly(1,4)-N-acetyl- β -D-glucosamine nanofiber having the specific acetylation degree, and

[0018] (2) a step of subjecting the mixture obtained in step (1) to suspension culture.

[37] A method for producing a cell secretion product, comprising a step of suspension culturing the adherent cell in a medium composition comprising poly(1,4)-N-acetyl- β -D-glucosamine nanofiber having a specific acetylation degree, wherein the specific acetylation degree is 5-70%.

[38] The method of [37], wherein a concentration of the poly(1,4)-N-acetyl- β -D-glucosamine nanofiber having the specific acetylation degree in the medium composition is 0.0001-0.2% (w/v).

[39] The method of [37] or [38], wherein the adherent cell is a cell that self-aggregates under suspension culture.

[40] The method of any of [37] to [39], wherein the adherent cell is a stem cell.

[41] The method of [40], wherein the stem cell is a mesenchymal stem cell.

[42] The method of any of [37] to [41], wherein a concentration of the serum in the medium composition is not more than 2%.

[43] The method of any of [37] to [42], wherein the cell secretion product is at least one selected from the group consisting of a low-molecular-weight compound, a protein, a nucleic acid, and a cell secretion vesicle.

[0019] In one embodiment, the present invention provides the following.